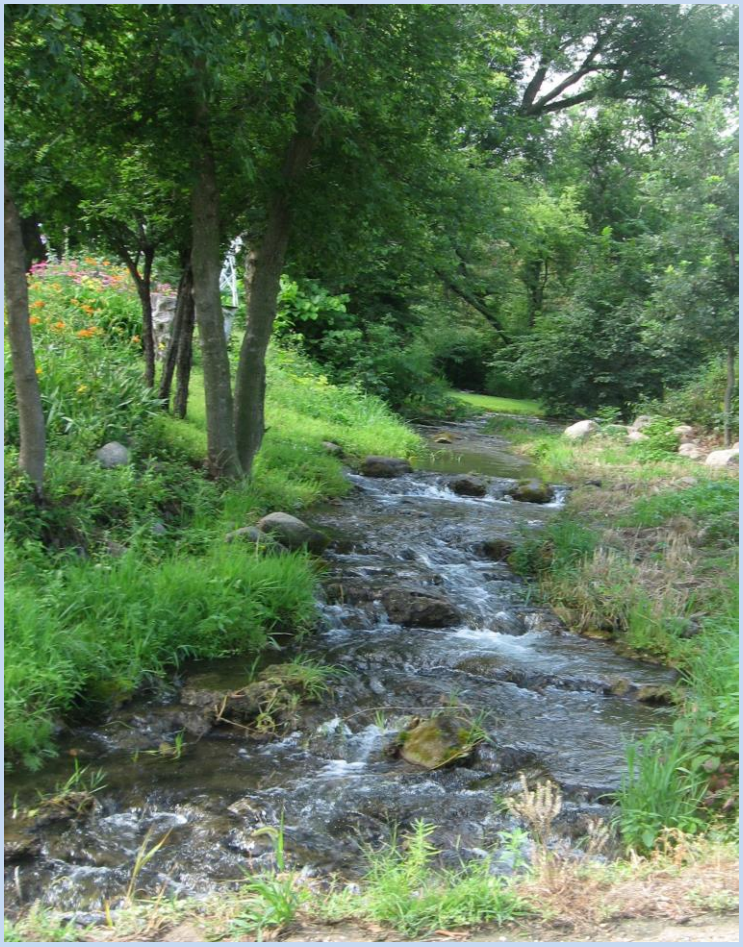
Yellow Medicine County Comprehensive Local Water Plan

January 2017 – December 2021



2016 Amendment

Executive Summary

Five Year Implementation Plan

EXECUTIVE SUMMARY

In 2005, Yellow Medicine County updated its Comprehensive Local Water Plan in accordance with Minnesota Statutes 103B. The Plan was in effect for a period of ten years, May 2005 – May 2015. The Plan serves two primary purposes: 1) to identify existing and potential issues and opportunities related to the protection, management, and development of water and land resources, and 2) to outline an implementation program that will guide the County in water resource management. The Implementation Section of the Plan (the Goals, Objectives and Action Steps) covers a five year period and needs to be reviewed and updated on a five year basis.

The Yellow Medicine County Board of Commissioners, on June 23, 2009, passed a resolution to amend the Yellow Medicine County Comprehensive Local Water Management Plan. On August 24, 2009 a Notice of Decision to Amend the Yellow Medicine County Local Water Management Plan was sent to all Local Units of Government and State review agencies. The Water Task Force met from February 2010 to April 2010 to identify priority issues for the next five years and to develop an implementation program. Comments were solicited from the public, other local governmental units, and state and federal agencies. Input was requested from Yellow Medicine County Pheasants Forever, Yellow Medicine County Cattleman's Association, Yellow Medicine County Soybean Growers and Yellow Medicine County Corn Growers Association.

On January 6, 2015, the Yellow Medicine County Board of Commissioners passed a resolution requesting that the Board of Water and Soil Resources extend the effective date of the Yellow Medicine County Comprehensive Local Water Management Plan, to December 31, 2016. This resolution was initiated in order to better coordinate the water planning efforts of the Yellow Medicine River One Watershed One Plan, the WRAPS work in the Lac qui Parle Watershed and the local water plan. The Board of Water and Soil Resources approved the request. The Yellow Medicine County Board of Commissioners, on February 23, 2016 adopted a resolution to amend the Yellow Medicine County Comprehensive Local Water Management Plan. The Water Task Force amended the Executive Summary and the Goals, Objectives and Actions.

This plan amendment addresses only the area within the Lac qui Parle and Redwood River Watersheds. The Yellow Medicine One Watershed One Plan addresses the area within the Yellow Medicine plan boundary, as it is identified in the Yellow Medicine One Watershed One Plan.

Yellow Medicine County's Population and Location

Yellow Medicine County is located in West Central Minnesota along the South Dakota border. The County has nine cities and twenty-one townships. According to the 2015 Census, the County had 9,875 residents. The County has an area of 752 square miles, which amounts to 485,120 acres of land. Hammer-shaped, the County is 54 miles long from east to west and 12 miles north and south at the west end of the County to 21 miles at the eastern boundary. The eastern boundary follows the Minnesota River and extends into the hammer shape, narrowing

down to a twelve-mile dimension north and south running westward for thirty miles to the South Dakota border. Outside of the County's nine communities, the countryside is primarily dominated by agricultural land uses.

The elevation is 1,714 feet in the southwest corner of the county, 1,380 feet in the northwest corner, 920 feet in the northeast tip of the county and 1,059 feet in the southeast corner. The highest point, which is near the southwest corner, is 1,739 feet. The lowest point, which is where the Minnesota River flows out of the county, is about 860 feet. All of the county drains into the Minnesota River by way of the Yellow Medicine River, the Lac qui Parle River, and small streams and ditches, which rise in the Coteau des Prairies, a long range of hills running from west of Lake Traverse in the north to the Iowa line in the South. The Lac qui Parle River flows from southwest to northeast through the County, entering Lac qui Parle County before discharging into the Minnesota River.

Yellow Medicine County shares borders with South Dakota to the west, Chippewa and Lac qui Parle County to the north, Renville County to the east, Redwood County to the southeast, and Lyon and Lincoln Counties to the south.

Yellow Medicine County
Water Task Force Committee Members

The following Yellow Medicine County Water Task Force members are recognized for their contributions to this Water Plan:

LouAnn Nagel, Yellow Medicine SWCD
Joe Ferguson, LqP Yellow Bank Watershed District & Ag Producer
Emily Javens, Yellow Medicine River Watershed District
Mitch Kling, Lincoln Pipestone Rural Water System
Gene Eilers, Municipalities Representative
Alan Saltee, Township Representative & Ag Producer
Gary Johnson, County Commissioner
Chris Balfany, Zoning Administrator
Delmar Mamer, Citizen
Jolene Johnson, Water Plan Coordinator

Ex-Officio Members

Jason Beckler, BWSR
Mary Homan, Lac qui Parle Watershed Clean Water Partnership

Yellow Medicine River Watershed

The Yellow Medicine River and associated watershed originates in Lincoln County at Lake Shaokatan and flows northeast into Yellow Medicine County and then flows eastward to the Minnesota River south of Granite Falls. Fifty three (53%) percent of the Watershed; or 353,260 acres, is within the borders of Yellow Medicine County. The Yellow Medicine River is divided into three major branches, the North Branch, the South Branch and the Main Stem. It has two major tributaries, Mud Creek and Spring Creek.

The intent of the Greater Yellow Medicine River Clean Water Partnership (1997 – 2007) was to advance the current understanding of the cause-effect mechanisms relating the watershed land use practices to river water quality. Fifteen hydrologic sampling stations were located throughout the watershed representing discharges from relatively large contributing watershed drainages. Implementation activities during the Phase II Clean Water Partnership included conservation measures such as CREP, CRP and RIM programs, filter strips and basins, upgrades to septic systems, local nutrient management assessments conducted by the Yellow Medicine River Watershed District and several information and education initiatives.

The Minnesota Pollution Control Agency, in 2010, began the Watershed Restoration and Protection Strategy process for the Yellow Medicine River Watershed. This approach looks at the drainage area as a whole instead of focusing on lakes and stream sections one at a time. During the first phase, data was collected about the biology, chemistry and flow of the watercourses. There were 7 lakes and 16 stream reaches that were identified as impaired. The report summarized restoration and protection strategies to restore and protect the water resources.

In 2014, ten local units of government entered into a Memorandum of Agreement to develop the Yellow Medicine One Watershed One Plan. The mission of these organizations is to work together with citizens to restore and protect the water resources of the Yellow Medicine River plan boundary. The Yellow Medicine One Watershed One Plan addresses three priority concerns: 1) mitigate altered hydrology and minimize flooding; 2) minimize the transport of excess nutrients, sediment, and bacteria; and 3) preserve groundwater quantity and quality. Measurable goals and actions were developed based on the WRAPS report, the HSPF Scenarios Application Manager (SAM) and the knowledge and experience of the Planning Work Group.

Lac qui Parle – Yellow Bank Watershed

The western one-third of Yellow Medicine County is drained by the Lac qui Parle River. There are approximately 117,760 acres of the watershed in Yellow Medicine County. The Lac qui Parle River flows from the southwest to the northeast through the County and enters Lac qui Parle County before discharging into the Minnesota River. An important land feature to note is that there is a 1,070 foot drop in elevation in the first 60 miles of drainage and a 930 foot drop in elevation over the next 1,000 miles of drainage. The following are tributaries: Canby Creek, Florida Creek, Lazarus Creek and the Lac qui Parle Creek.

The Lac qui Parle-Yellow Bank Watershed District conducted a watershed wide diagnostic study from 2001-2003. The purpose of the study was to assess the water quality and land use

throughout the District to develop a strategic implementation plan that could be shared with watershed partners.

The TMDL report, completed in 2012, addresses eight impaired reaches on the Lac qui Parle River. Impairments include bacteria, turbidity and low dissolved oxygen.

The Lac qui Parle River Watershed Restoration and Protection Strategies (WRAPS) began in March 2015 with a Surface Water Assessment Grant (SWAG). Sixteen sites were monitored for nitrogen, phosphorus, total suspended solids, sulfates, chloride, and E. coli bacteria. A quick review indicates that the samples are still over the water quality standards for total suspended solids and bacteria at several sites. MPCA has conducted macroinvertabrete studies and the DNR has conducted geomorphology and hydrology surveys in the watershed. Results from surveys and samples will be assessed to determine watershed health. The WRAPS report is scheduled for completion in 2019. The Lac qui Parle-Yellow Bank Watershed District has completed a Terrain Analysis for the watershed that has resulted in HUC 12 watershed sectional mapping that identifies BMP's on fields that have a critical and very high runoff risk based on soil and land slope.

Redwood River Watershed

The extreme southeastern tip of Yellow Medicine County is drained by the Redwood River. There are approximately 14,100 acres of the watershed that lie within Yellow Medicine County's borders. The Redwood River flows approximately 124 miles to it's confluence with the Minnesota River, dropping about 750 feet in elevation from the headwaters to the outlet. This topography results in periodic spring and summer flooding in the central portions of the watersheds. At times, damages are severe. A related implication is the rapid transport of sediment and attached nutrients from inadequately treated cropland during spring snowmelt and spring and summer rainfall events. Nearly all wetlands have been drained by a highly efficient and interconnected artificial drainage system that has allowed agriculture, the primary land use, to flourish. Recreational opportunities on the Redwood River are limited by degraded water quality, channel obstructions, limited access, and a lack of awareness by watershed residents.

Yellow Medicine County is a member of the Redwood-Cottonwood Rivers Control Area (RCRCA). This joint powers organization was formed in 1983 by eight member counties and their SWCDs to enhance and protect the Redwood and Cottonwood Rivers. The Redwood River Clean Water project sponsored by RCRCA, was designed to improve water quality in the Redwood River, Lake Redwood and ultimately the Minnesota River. Findings were based on a three-year evaluation of the lake's watershed. Sedimentation and high phosphorus concentrations are primary concerns in the watershed. Accelerated implementation of best management practices (BMPs) have been a special emphasis in several priority minor watersheds. Since the end of the Clean Water Partnership, BMP implementation and watershed assessment through cost-share grants and water quality sampling continue. RCRCA has successfully applied for and administered grants to accelerate the implementation of BMPs, drainage water management practices, low-interest septic loans, and water quality monitoring. Landowners who voluntarily implement

BMPS can receive technical assistance and cost share assistance (not to exceed 75%) to offset the cost of installing conservation practices. Effects of BMPs on water quality are monitored through a comprehensive monitoring and evaluation program. RCRCA has continually monitored the Redwood River since 1992; 3 locations continue to be sampled at least monthly and on a storm-induced basis through MPCA's Watershed Pollutant Load Monitoring Network (WPLMN).

With the anticipation of the Watershed Restoration and Protection Strategies (WRAPS) slated to begin in March 2017 for the watershed, additional water quality sampling and analysis will be conducted by RCRCA through a Storm Water Assessment Grant (SWAG). This intensive water quality monitoring takes place during the first two years of the four-year assessment. MPCA has identified 8 monitoring sites within the Redwood River watershed for SWAG monitoring; a few of these sites have been established through the WPLMN program. Information obtained during this four-year assessment is summarized in a WRAPS report which identifies the stressors in the watershed and helps target where conservation practices would be most beneficial.

Four reaches of the Redwood River have been identified as being impaired for turbidity. These reaches are found throughout the watershed and vary in size. A draft TMDL to address the turbidity impairments was completed in 2010, however EPA approval has been held up by a contested court case. Currently, nine reaches of the Redwood River have been identified as being impaired for fecal coliform. The Redwood River Fecal Coliform TMDL was completed in October 2013 and received EPA approval on January 21, 2014.

Summary of Goals, Objectives and Actions

In order to address the priority concerns identified in the Yellow Medicine County Comprehensive Local Water Management Plan, the Water Plan Task Force had identified four priority issues:

1. **Groundwater Protection**: Protect drinking water resources by providing assistance to help manage vulnerable areas from potential contamination sources.
2. **Erosion and Sediment Control**: Soil erosion and sedimentation on agricultural lands.
3. **Reducing Priority Pollutants**: Priority pollutants, nutrients and bacteria, related to feedlots, non-conforming subsurface sewage treatment systems and other surface runoff.
4. **Surface Water, Drainage Management and Flooding**: Manage flooding and its effects minimizing losses associated with the flooding of agricultural lands. Address runoff volume and water quality deterioration through surface water and drainage management.

For each of the Priority Issues, Objectives and Action Items have been developed to form the implementation plan. Below is a summary of the action items for each goal.

Priority Issue #1: Groundwater Protection:

- Work with Public Water Suppliers in the development and implementation of their Wellhead Protection Plans and encourage landowners to use wise land use practices in the drinking water supply management areas.
- Seek funds to seal abandoned wells and educate the public about the importance of protecting the groundwater
- Expand groundwater monitoring
- Encourage water conservation efforts and the installation of best management practices which recharge groundwater.

Priority Issue #2: Erosion and Sediment Control:

- Reduce erosion and sediment problems through the use of Best Management Practices by installing field windbreaks, water and sediment control basins, grass waterways, restoring wetlands, planting cover crops, enrolling acres into residue management practice programs, converting cropland to perennial cover, and prescribed grazing systems.
- Implement the 2015 Buffer Law.
- Protect and improve the biodiversity of the County.
- Educate landowners about conservation programs

Priority Issue #3: Reducing Priority Pollutants:

- Protect surface water quality from contamination caused by point and non-point source pollution by developing nutrient and pesticide management plan, upgrading non-conforming septic systems, sealing abandoned wells, and by bringing non-conforming feedlots into compliance.
- Target impaired water bodies for implementation of practices to reduce pollutants.
- Educate landowners about proper SSTS maintenance, proper nutrient management, and protecting surface waters from deterioration.

Priority Issue #4: Surface Water, Drainage Management and Flooding

- Minimize losses associated with the flooding of agricultural lands by restoring wetlands, installing flood control structures, and restoring flood prone land along rivers, streams, and waterways.
- Apply watershed based principles in properly managing drainage systems by replacing open intakes with alternative intakes, inspecting and repairing small dams in need of repairs.
- Manage drainage systems to provide both conveyance and ecological benefits.

Water Plan Past Accomplishments

The Yellow Medicine County Comprehensive Local Water Plan has addressed many water quality and quantity issues. Over the past years, the Water Task Force has met and developed work plans according to the goals, objectives and actions presented in the Water Plan. The

Yellow Medicine SWCD has been a very important partner in the implementation part of the Water Plan. The following is a list of Water Plan accomplishments from 2010 – 2016.

Education and Information:

- Educate landowners about the importance of protecting wellhead protection areas.
- Promoted water conservation through newsletter articles.
- Assist the Lac qui Parle and the Yellow Medicine River Watershed Districts with TMDL development and implementation.
- Published the Water Quality Quantity Newsletter annually.
- Promote recycling and proper household hazardous waste management.
- Participated in the SWMACDE's Environmental Fair
- Published news articles to address water quality, water quantity and conservation issues and concerns.
- Educate landowners about the importance of conservation practices and conservation programs and BMPs.
- Science Museum of MN presented the lyceum "Water" to elementary students in the County.

Monitoring and Data Collection:

- Free water testing (coliform bacteria and nitrates) of private wells in the County. 219 private wells were tested.
- Nitrate testing clinic conducted. Twelve samples tested.

Inventory and Mapping:

- Assisted landowners in the review and comment of the draft floodplain maps.
- Continue to maintain the County and Judicial Ditch GIS layer of county ditch systems.
- Continue to maintain the feedlot database.

Land and Water Treatment:

- Sealed 86 wells from 2010 - 2016 through the Abandoned Well Sealing Cost Share Program
- Assisted with the Household Hazardous Waste Collection, Electronics Collection and Fluorescent Bulb Collection
- Upgraded 231 septic systems from 2010 – 2016
- Assisted the City of Hazel Run with the upgrade of their non-conforming individual septic systems to a cluster system.
- Inspect 10% of the registered feedlots in the County on an annual basis.
- Designed and planted 39,259 feet of field windbreaks
- Designed and planted 141 acres of farmstead windbreaks
- Designed and planted 26.9 acres of wildlife habitat
- Installed 286,008 feet of tree fabric
- Worked with landowners on the design, cost-share and installation of 7,578 feet of terraces and 52 water and sediment control basins

- Worked with landowners on the design, cost-share and installation of 39.5 acres of grass waterways
- Established 3,540.2 acres of filter strips/buffers along ditches and streams
- Enrolled 1,961.1 acres of cropland into CRP, RIM, etc.
- Enrolled 1,574 acres of pasture into prescribed grazing systems.
- Restored 1,840.6 acres of wetlands into conservation programs
- Cost shared the installation of 112 blind intakes

Regulations, Ordinances and Planning:

- Serve on the Yellow Medicine River Watershed WRAPS Committee and the One Watershed One Plan Planning Work Group and the Lac qui Parle Watershed Clean Water Partnership Technical Advisory Committees.
- Participate in the City of Canby's wellhead protection planning meetings.
- Updated the Yellow Medicine County Land Use and Related Resource Management Ordinance.
- Conducted an annual meeting of stakeholders and the Local Work Group to discuss resource concerns and set priority areas for EQIP

The following is a list of ongoing activities in Yellow Medicine County:

- Publish newsletters, news articles, and news releases to address water quality, water quantity, and conservation issues and concerns.
- Promote recycling and solid waste management
- Provide well testing kits for the public
- Continue to promote and staff the Household Hazardous Waste drop off site located in Clarkfield
- Continue to enforce the Yellow Medicine County Feedlot Ordinance and assist producers with feedlot questions
- Provide low interest loans for septic system upgrades through the watershed's Clean Water Partnership programs
- Provide grants to low-income residents to upgrade their septic systems.
- Administer the Shoreland and Floodplain Management program
- Work with the Minnesota Department of Agriculture as a testing site for commercial pesticide applicators
- Continue to require permits and inspections for all newly installed septic systems
- Select a conservation farmer
- Participate in the MASWCD poster and essay contest
- Set up displays at the fair, banks, restaurants, family resource fairs, etc.
- Work with the SWMACDE to sponsor an Environmental Fair for all 6th graders
- Distribute an education newsletter twice a year to all teachers, scout leaders, 4H leaders, etc.
- Promote soil stewardship week
- Assist and promote the SWMACDE Area Envirothon and the State Envirothon

- Present at "Ag in the Classroom" event
- Hold a Ladies Day Workshop
- Maintain County and SWCD website
- Develop promotional presentations for local organizations
- Provide assistance in implementing the Federal Farm Program
- Continue to administer the Wetland Conservation Act
- Continue to monitor groundwater observation wells designated by DNR
- Continue to comment on DNR water permits
- Participate in the state rainfall-monitoring program by selecting rainfall monitors to record daily precipitation
- Yellow Medicine County has designated the entire county as a high priority wetland preservation area. The county will continue to accept and process eligible applications for wetland preservation on a countywide basis

For more information about Yellow Medicine County's Ongoing activities, please contact the following:

Yellow Medicine County Zoning Office
1000 10th Ave, P.O. Box 675
Clarkfield MN 56223-0675
(320) 669-7524

Goals, Objectives and Action Steps

Yellow Medicine County's four priority issues are:

Groundwater Protection
Erosion and Sediment Control
Reducing Priority Pollutants
Surface Water, Drainage Management and Flooding

This section identifies the goals, objectives and actions that will guide the County in water resource management over the next five years (2017 – 2021). Each of the action steps identifies who is responsible for its implementation, when the action step should occur, and an estimate on how much it will cost. For the purposes of this section, the following abbreviations are used.

CB = County Board
PC = Planning Commission
PZ = Planning & Zoning
DA = Ditch Authority
HD =Highway Department
YMR = Yellow Medicine River Watershed
LqP = Lac Qui Parle Watershed
MGS = Minnesota Geological Survey
SWCD = Soil and Water Conservation District
WPC = Water Plan Coordinator
NRCS = Natural Resources Conservation Service
RCRCA = Redwood Cottonwood Rivers Control Area
USACE = U.S. Army Corps of Engineers
BWSR = Board of Water & Soil Resources
DNR = Department of Natural Resources
FWS = U.S. Fish & Wildlife Service
MDA = Minnesota Department of Agriculture
MDH = Minnesota Department of Health
MDOT = MN Department of Transportation
CPH = Countryside Public Health
MPCA = Minnesota Pollution Control Agency
UMES = University of MN Extension Service
PRK = Yellow Medicine County Parks Dept
LCEO = Lyon County Environmental Office

Throughout the Comprehensive Water Plan, Goals, Objectives and Action Steps are defined in the following way:

Goal: A general, idealistic statement intended to be achieved at some undetermined future date.

Objective: An action-oriented statement that supports the completion of a goal. There may be more than one objective per goal.

Action Step: Specific implementation steps that will be followed in order to achieve the County's Goals and Objectives.

Impaired Waters and TMDL's:

Minnesota's Impaired Waters and Total Maximum Daily Loads (TMDL):

The federal Clean Water Act (CWA) requires states to adopt water quality standards to protect waters from pollution. These standards define how much of a pollutant can be in the water and still allow it to meet designated uses, such as drinking water, fishing and swimming.

The standards are set on a wide range of pollutants, including bacteria, nutrients, turbidity and mercury. A water body is "impaired" if it fails to meet one or more water quality standards.

To identify and restore impaired waters, Section 303(d) of the Clean Water Act requires states to:

1) Assess all waters of the state to determine if they meet water-quality standards.
2) List waters that do not meet standards (also known as the 303d List) and update every even-numbered year.
3) Conduct TMDL studies in order to set pollutant reduction goals needed to restore waters.

Federal and state regulations and programs also require implementation of restoration measures to meet TMDLs.

MPCA's responsibilities include performing assessment activities, listing impaired waters, and conducting TMDLs in Minnesota. The agency also coordinates closely with other state and local agencies on restoration activities.

The Clean Water Legacy Act, passed in June 2006, allocates first year funding to accelerate water monitoring, TMDL development and restoration activities throughout the state.

Impaired Waters:

Below is the MPCA 2016 Clean Water Act Section 303(d) list of impaired water for Yellow Medicine County.

Reach	Unit ID#	Affected Use	Pollutants/Stressors
Lac qui Parle River Headwaters (Lk Hendricks 41-0110-00) to Lazarus Creek (Canby Cr)	07020003-505	Aquatic Recreation	Fecal Coliform
Lac qui Parle River Headwaters (Lk Hendricks 41-0110-00) to Lazarus Creek (Canby Cr)	07020003-505	Aquatic Life	Fish Bioassessments
Lac qui Parle River Headwaters (Lk Hendricks 41-0110-00) to Lazarus Creek (Canby Cr)	07020003-505	Aquatic Life	Turbidity

Lazarus Creek MN/SD border to Canby Cr	07020003-509	Aquatic Life	Fish Bioassessments
Minnesota River Chippewa R to Stony Run Cr	07020004-501	Aquatic Recreation	Fecal Coliform
Minnesota River Chippewa R to Stony Run Cr	07020004-501	Aquatic Consumption	Mercury in Fish Tissue
Minnesota River Chippewa River to Stony Run Cr	07020004-501	Aquatic Life	Turbidity
Yellow Medicine River Spring Cr to Minnesota River	07020004-502	Aquatic Life	Turbidity
Yellow Medicine River Spring Cr to Minnesota R	07020004-502	Aquatic Life	Nutrient/eutrophication biological indicators
Yellow Medicine River Spring Cr to Minnesota R	07020004-502	Aquatic Consumption	Mercury in Fish Tissue
Minnesota River Hawk Cr to Wood Lake Cr	07020004-506	Aquatic Consumption	Mercury in Fish Tissue
Minnesota River Hawk Cr to Wood Lake Cr	07020004-506	Aquatic Consumption	PCB in Fish Tissue
Yellow Medicine River S Br Yellow Medicine River To Spring Cr	07020004-513	Aquatic Life	Turbidity
Yellow Medicine River S Br Yellow Medicine River To Spring Cr	07020004-513	Aquatic Consumption	Mercury in fish tissue
Yellow Medicine River S BR Yellow Medicine R To Spring Cr	07020004-513	Aquatic Recreation	Escherichia Coli
Minnesota River Hazel Cr to Yellow Medicine River	07020004-516	Aquatic Consumption	Mercury in Fish Tissue
Minnesota River Hazel Cr to Yellow Medicine River	07020004-516	Aquatic Consumption	PCB in Fish Tissue
Minnesota River Stony Run Cr to Palmer Cr	07020004-519	Aquatic Consumption	Mercury in Fish Tissue
Stony Run Creek T116 R40W, west line To Minnesota River	07020004-535	Aquatic Recreation	Escherichia Coli
Hazel Creek Unnamed cr to Minnesota R	07020004-536	Aquatic Recreation	Escherichia Coli

Spring Creek Headwaters to Yellow Medicine River	07020005-538	Aquatic Life	Fish Bioassessments
Spring Creek Headwaters to Yellow Medicine	07020004-538	Aquatic Recreation	Escherichia coli
Mud Creek Headwaters to T114 R43W, S35, South line	07020004-543	Aquatic Life	Aquatic Macro-Invertebrate bioassessments
Mud Creek Headwaters to T114 R43W, S35, South line	07020004-543	Aquatic Life	Turbidity
Mud Creek Headwaters to T114 R43W S35, south line	07020004-543	Aquatic Recreation	Escherichia coli
Judicial Ditch 10 (Wood Lake Cr) Timm Lk to Wood Lake Outlet	07020004-546	Aquatic Life	Fish Bioassessments
Judicial Ditch 10 (Wood Lake Cr) Wood Lk outlet to Minnesota River	07020004-547	Aquatic Life	Aquatic macro-invertebrate bioassessments
Judicial Ditch 10 (Wood Lake Cr) Wood Lake outlet To Minnesota River	07020004-547	Aquatic Life	Fish Bioassessments
Judicial Ditch 10 (Wood Lake Cr) Wood Lk outlet To Minnesota River	07020004-547	Aquatic Recreation	Escherichia coli
Minnesota River Palmer Cr to Granite Falls City N Boundary	07020004-583	Aquatic Consumption	Mercury in Fish Tissue
Minnesota River 8th Ave and Baldwin St bridge To MN Falls Dam	07020004-613	Aquatic Consumption	Mercury in Fish Tissue
Judicial Ditch 17 CD 3 to Yellow Medicine River	07020004-622	Aquatic Recreation	Escherichia coli
County Ditch 39 CD6A to Minnesota River	07020004-713	Aquatic Life	Aquatic macro-invertebrate bioassessments
County Ditch 39 CD6A to Minnesota R	07020004-713	Aquatic Life	Fishes Bioassessments

County Ditch 2 Unnamed cr to Minnesota River	07020004-717	Aquatic Life	Fishes bioassessments
Unnamed creek Lone Tree Lk to Minnesota River	07020004-718	Aquatic Life	Aquatic macro-invertebrate bioassessments
Unnamed creek Lone Tree Lk to Minnesota River	07020004-718	Aquatic Life	Fishes bioassessments

Lakes	**Lake ID #**	**Affected Use**	**Pollutants/Stressors**
Del Clark	87-0180-00	Aquatic Consumption	Mercury in Fish Tissue
Curtis	87-0016-00	Aquatic Recreation	Nutrient/eutrophication biological indicators
Unnamed – Wetland	87-0121-00	Aquatic Life	Aquatic macro-invertebrate bioassessments
Unnamed – Wetland	87-0121-00	Aquatic Life	Aquatic plant bioassessments
Wood – Lake or Reservoir	87-0030-00	Aquatic Recreation	Nutrient/eutrophication biological indicators

Implementation Plan

Priority Issue #1: Groundwater Protection

Priority Concern: *Protect drinking water resources by providing assistance to help manage vulnerable areas from potential contamination sources.*

Groundwater Goal: *Protect and Improve the Quality of Groundwater in the County*

ACTION ITEMS	FOCUS AREAS	TIME FRAME	RESPONSIBLE AGENCY	FUNDING SOURCES	ESTIMATED COST
Objective A: Support the needs of public water suppliers and wellhead protection planning.					
1. Participate in the preparation and implementation of wellhead protection plans for public water suppliers by attending meetings and providing information as needed.	Public Water Suppliers	2017 – 2021	WPC, PZ, SWCD, PWS	CB, BWSR, SWCD, PWS	$2,500
2. Consider wellhead protection areas when making land use decisions, such as the permitting of feedlot, land use and sewer systems.	County Wide	2017-2021	PZ, PC, CB, PWS	CB	$9,500
3. Identify and contact landowners who own and operate land in the delineated wellhead protection areas and/or source water protection areas and encourage them to use practices that will aid in the protection of groundwater.	County Wide	2017-2021	SWCD, PZ, PWS	CB, SWCD, MDH, BWSR	$5,000
4. Work with Public Water Suppliers to encourage landowners in the Drinking Water Supply Management Area to use appropriate land use practices to protect the public water supply from potential contamination.	County Wide	2017 – 2021	PZ	CB, MDH, BWSR	$1,500
5. Seek funding for the Wellhead Protection Areas of: the City of Marshall well in Sandnes Township, Lincoln Pipestone Rural Water – Burr wellfield and the City of Canby, for cost share and other land use incentive	Wellhead Protection Areas	2017-2021	SWCD, PZ, WPC, NRCS	MDH	$1,000

programs. Any additional wellhead protection areas will be added upon completion of those Plans.					
6. Meet with Lincoln Pipestone Rural Water annually on the expansion of the rural water system and advise them about County programs that will help manage potential contamination sources.	County Wide	2017-2021	WPC, SWCD	CB, SWCD	$1,250
Objective B: Encourage good land use decisions to protect groundwater resources from contamination sources.					
1. Annually educate landowners, both rural and urban on the proper applications and disposal of agriculture and lawn chemical/fertilizers.	County Wide	2017-2021	WPC, PZ, MDA	CB, BWSR	$500
2. Provide financial assistance as available to seal 10 abandoned wells per year. Priority will be given to wells in the Lac qui Parle and Redwood River Watersheds.	County Wide	2017-2021	WPC	MDH, CB, BWSR, CWF	$20,000
3. Annually develop and distribute educational materials, through newsletters, county fair and the County website, for homeowners and realtors on the importance of disclosing and sealing wells.	County Wide	2017 - 2021	WPC	BWSR, CB	$500
4. Request the completion of a hydro-geologic atlas for Yellow Medicine County	County Wide	2017	WPC, DNR	LCCMR	$400,000
5. Annually provide a variety of education (through newsletters, news releases, websites, County Fair booth) on both public wellhead protection areas and the protection and management of private wells (and well areas) to city residents, rural residents and businesses regarding specific actions they can take to protect drinking water.	County Wide	2017 -2021	WPC	CB, BWSR	$1,000
6. Create a GIS map of the water testing data collected from the free water testing program.	County Wide	2018	WPC	BWSR, CB, CWF, MDH	$5,000
7. Encourage well owners to get private wells tested on a regular basis and provide free	County Wide	2017 – 2021	WPC	BWSR	$7,500

water testing to 75 homeowners bi-annually.					
8. Educate homeowners on the proper disposal of household hazardous waste and promote the use of the Household Hazardous Waste Facility in Clarkfield and conduct a mobile household hazardous waste collection bi-annually.	County Wide	2017-2021	WPC, LCEO	CB, BWSR	$11,000
9. Develop an inventory of unsealed wells using well-sealing records, rural water connections and abandoned farm sites.	County Wide	2018	MDH, PZ, WPC, DNR, LPRW	DNR, BWSR, MDH, CB	$5,000
Objective C: Expand groundwater monitoring.					
1. Annually monitor three (3) groundwater observation wells designated by the DNR.	County Wide	2017 – 2021	SWCD	DNR, SWCD	$2,700
2. Comment on DNR water permits for potential effects on drainage as it relates to the Wetland Conservation Act.	County Wide	2017 – 2021	SWCD	BWSR, SWCD	$4,500
3. Participate in the state rainfall monitoring program with 10 rural rainfall monitors and city monitors to record daily precipitation.	County Wide	2017 -2021	SWCD	SWCD/Volunteers	$6,000
Objective D: Ensure there is an adequate supply of drinking water for growth and development.					
1. Encourage water conservation efforts and educate residents on the importance of water conservation through newsletters, news releases and the County Website.	County Wide	2017-2021	WPC	BWSR, CB	$500
2. Encourage land uses and the installation of best management practices which recharge groundwater.	County Wide	2017 – 2021	SWCD	BWSR, SWCD	$2,000
3. Increase awareness among public officials, land owners, and the general public regarding the interaction between groundwater and surface water sources in order to make informed water management decisions, through educational efforts such as annual news articles.	County Wide	2017-2021	WPC	CB	$500

Priority Issue #2: Erosion and Sediment Control ***Priority Concern:*** *Soil erosion and sedimentation on agricultural lands* ***Soil Erosion and Sediment Goal****: To Protect and Improve Surface and Ground Water Quality by Addressing and Reducing Soil Erosion and Sedimentation.*					
ACTION ITEMS	**FOCUS AREAS**	**TIME FRAME**	**RESPONSIBLE AGENCY**	**FUNDING SOURCES**	**ESTIMATED COST**
Objective A: Reduce erosion and sediment problems to sustainable levels through the use of Best Management Practices (BMPs).					
1. Promote Best Management Practices in the County. Concentration will be on the following designated high priority areas as identified through the Stakeholder and Local Work Group Process:	a) Florida Creek to West Branch Lac qui Parle River b) Lazarus Creek (Canby Creek) to Lac qui Parle River c) Lac qui Parle Headwaters (Lake Hendricks) to Lazarus Creek (Canby Creek) d) Lac qui Parle River Lazarus Creek (Canby Creek) to West Branch Lac qui Parle River	2017 – 2021	SWCD	BWSR/NRCS	$20,000
2. Reduce soil erosion caused by wind, through the SWCD tree program, living snow fence, field windbreaks and farmstead shelterbelts by installing 5,000 feet including weed control, matting and preparation.	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, MDOT, HD	SWCD, MNDOT, NRCS, FSA, DNR, NPO, ROAD AUTHORITIES	$6,000
3. Increase reduced tillage practices by enrolling 3,000 acres into residue management practice programs.	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, NRCS	SWCD, BWSR, NRCS, Landowners	$90,000

4. Reduce the amount of water erosion to 5-ton or less soil loss per acre on severely eroded acres by the installation of concentrated flow practices such as but not limited to: a. Five water and sediment control basins per year, treating 10 acres per basin. b. Grass waterways 5 acres/5 years following conservation practices.	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, NRCS	BWSR, NRCS, SWCD, CWF	$208,290
5. Continue to manage CREP, RIM and monitor sites to see that conservation practices are installed and conduct approximately 100 status reviews each year.	County Wide	2017-2021	SWCD, NRCS	BWSR	$22,500
6. Work with landowners to achieve 100% compliance with the Buffer Law.	County Wide	2017-2021	SWCD	BWSR	$65,520
7. Maintain an inventory of buffer strips along watercourses in the County that are in compliance and those not in compliance with the Buffer law.	County Wide	2017-2021	SWCD	BWSR	$38,925
8. Continue to monitor compliance with the one rod buffer requirement in the drainage law.	County Wide	2017-2021	DA	CB	$10,000
9. Convert 250 acres of cropland to perennial cover. First priority will be given to perpetual protection programs. (50 acres/year)	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, NRCS	BWSR, NRCS, FSA	$1,630,000
10. Enroll 500 acres of pasture into prescribed grazing systems. (100 acres/year)	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, NRCS	BWSR, NRCS	$7,590
11. Restore 250 acres of wetlands. (50 acres/year)	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, NRCS	BWSR, NRCS, FSA	$1,630,000
12. Promote the Minnesota Agricultural Water Quality Certification Program with news articles, radio ads, one-on-one contacts and other methods which result in four applications per year.	County Wide	2017-2021	SWCD	MDA	$8,000

13. Add cover crops to 2,500 acres	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, NRCS	BWSR, NRCS, Landowners	$315,000
14. Use LIDAR and/or any new technology to identify high priority sediment sources to target best management solutions.	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD	SWCD, CB	$5,000
15. Use the SAM to prioritize, target and measure water quality efforts.	Yellow Medicine River Watershed	2017-2021	SWCD, PZ	SWCD, CB	$5,000
Objective B: Protect and improve the biodiversity of the County.					
1. Designate 25 hours to protect the Granite Rock Outcrop in the Minnesota River Valley.	MN River Valley	2017-2021	SWCD	BWSR, SWCD	$500
2. Expend 100% of funding available through the Working Lands Initiative Program/Prairie Coteau Local Technical Team/MN River Valley Local Technical Team to protect and restore prairie grasslands and wetlands in the Prairie Core, Corridor areas and other priority areas.	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, NRCS	DNR, FSA, NRCS, BWSR, USFWS	$31,250
3. Increase pollinator habitat by 250 acres. (50 acres per year)	Lac qui Parle River Watershed and Redwood River Watershed	2017-2021	SWCD, NRCS	NRCS, SWCD, BWSR, FSA	$176,860
Objective C: Education and Outreach.					
1. Conduct an annual meeting of stakeholders and/or Local Work Group to discuss resource concerns and set priority areas for the County.	County Wide	2017-2021	SWCD, NRCS	SWCD	$2,500
2. Educate landowners/operators about erosion and sediment control, the importance of installing conservation practices and encourage enrollment into conservation programs by providing information and options about BMP's	County Wide	2017-2021	SWCD	SWCD, WPC	$5,625

	through newsletters, news releases and individual contacts.					
3.	Designate 40 hours/year to contact landowners who are enrolled into the RIM Program encouraging them to reestablish existing vegetative cover to native grasses, etc.	County Wide	2017-2021	SWCD	BWSR, SWCD	$8,000
4.	Assist landowners with vegetation management information, cost share and habitat management plans for prescribed burning, haying and grazing, invasive species management and installation of winter cover practices that also enhance wildlife.	County Wide	2017-2021	SWCD	SWCD, NRCS, FSA, DNR, WLI, USFWS, LSOHC	$500,000

Priority Issue #3: Reducing Priority Pollutants

Priority Concern: *Priority pollutants, nutrients and bacteria, related to feedlots, non-conforming subsurface sewage treatment systems and other surface runoff.*

Reducing Priority Pollutants Goal: *Reduce nutrients and bacteria in the County's Surface Waters*

ACTION ITEMS	FOCUS AREAS	TIME FRAME	RESPONSIBLE AGENCY	FUNDING SOURCES	ESTIMATED COST
Objective A: Protect surface water quality from contamination caused by point and non-point source pollution by reducing priority pollutants to sustainable levels.					
1. Develop nutrient and pesticide management plans, targeting 5,000 acres countywide.	County Wide	2017-2021	SWCD, NRCS	MPCA, BWSR, NRCS	$750,000
2. Upgrade 35 Subsurface Sewage Treatment Systems (SSTS) per year, utilizing any available grant funds and/or low interest loans if landowners meet the qualifications.	County Wide	2017-2021	PZ, SWCD	MDA, CWF	$2,100,000
3. Protect and enhance Del Clark Lake by encouraging landowners to install Best Management Practices. Seal two abandoned wells, bring two non-conforming sewer systems and one feedlot into compliance in the Canby Creek Watershed annually.	Lac qui Parle River Watershed	2017-2021	PZ, WPC, SWCD, NRCS	NRCS, BWSR, MDH, CWF, CB, SWCD, LQP	$200,000
4. Assist five feedlot operators per year with completing MPCA permit applications and seeking financial assistance through EQIP, State Cost-Share and/or the Ag BMP Low Interest Loan Program.	County Wide	2017-2021	PZ, NRCS, SWCD	CB, CWF, NRCS, SWCD	$15,000
5. Create a GIS layer of all septic systems installed in the County.	County Wide	2018	WPC, PZ	CWF, CB, BWSR	$10,000
6. Develop a GIS layer of registered feedlots in the County.	County Wide	2019	WPC, PZ	CWF, CB, BWSR, MPCA	$10,000
7. Inspect 7% of the County's feedlots annually.	County Wide	2017-2021	PZ	CB	$5,000

8. Work with livestock producers to bring all feedlots in the Lac qui Parle River Watershed into compliance with Chapter 7020 Rules.	Lac qui Parle River Watershed	2017-2021	PZ, LQP	MPCA, CWF, NRCS, SWCD	2,000,000
9. Inspect all newly installed septic systems annually for compliance with 7080 Rules.	County Wide	2017-2021	PZ	BWSR, CB	$30,000
10. Create a GIS map of cropland fields that have been identified as needed for manure application through manure management plans.	County Wide	2017-2021	PZ	MPCA, CWF, CB, YMR	$10,000
11. Upgrade the wastewater facilities at Timm Park, which is located on Wood Lake.	Timm Park	2019	CB, PRK	CWF, CB, BWSR, MPCA	$200,000
12. Work with the residents of Sunset Drive (Canby) to upgrade their non-conforming SSTS.	Lac qui Parle River Watershed	2020	PZ	MPCA, CWF, CB	$500,000
13. Implement the Feedlot Program	County Wide	2017-2021	PZ	MPCA, CB	$150,000
14. Develop an inventory of compliant septic systems based on existing permit data to identify and prioritize inventory needs.	County Wide	2019	PZ	MPCA, CB, CWF	$16,000
Objective B: Target identified impaired (Total Maximum Daily Load – TMDL) water bodies for implementation of practices to reduce pollutants.					
1. Work with the Minnesota Pollution Control Agency and the watersheds to develop TMDL plans that will help meet the goal of getting the waters off the TMDL 303D list of impaired waters. The 2016 list of impaired waters in the County includes the waters listed at the beginning of this section.	County Wide	2017-2021	MPCA, WPC, SWCD	YMRWD, LQP, MPCA, CB	Unknown
2. Cooperate with the Lac qui Parle-Yellow Bank Watershed District in completing the WRAPS study and serve on the Technical Advisory Committee and in other roles as necessary.	Lac qui Parle River Watershed	2017-2021	LQP, WPC, SWCD, NRCS	LQP, CB, MPCA	$10,000
3. Cooperate with the Redwood River Watershed District in completing the WRAPS study and serve on the	Redwood River Watershed	2017-2021	RCRCA, WPC, SWCD, NRCS	RCRCA, CB, MPCA	$10,000

Technical Advisory Committee and in other roles as necessary.					
4. Assist in the development and implementation of the Implementation Plan for the fecal coliform and turbidity impairments in the Lac qui Parle River, Lazarus Creek and Florida Creek by attending meetings as needed.	Lac qui Parle River Watershed	2017-2021	LQP, WPC, SWCD, NRCS	LQP, CB, SWCD	$3,000
5. Annually review the County's Shoreland Ordinance and amend as needed to comply with the statewide program.	County Wide	2017-2021	PZ	CB, BWSR	$500
6. Continue to cooperate with the Redwood Cottonwood Rivers Control Area (RCRCA) by attending meetings and assisting as needed.	Redwood River Watershed	2017-2021	WPC, RCRCA, SWCD, CB	CB, BWSR	$500
Objective C: Education and Outreach					
1. Provide information and education to landowners, through articles in the Water Quality/Quantity newsletter and direct mailings to feedlot operators, regarding the need to follow the University of Minnesota's nutrient management recommendations.	County Wide	2017-2021	SWCD, NRCS	BWSR, MPCA, CB	$4,000
2. Provide educational and technical assistance annually, through direct mailings and annual newsletters, to homeowners on proper SSTS maintenance.	County Wide	2017-2021	PZ	BWSR, MPCA, CB	$4,000
3. Educate landowners who own land around the County's surface waters about the importance of protecting our surface waters from deterioration, by sending them a direct mailing biennially.	County Wide	2018, 2020	WPC, SWCD	BWSR, CB	$5,625
4. Raise awareness on the importance of upland treatment that impacts the water quality of Del Clark Lake and the Lazarus Creek Watershed, through	Lac qui Parle River Watershed	2017-2021	SWCD, PZ	BWSR, MPCA, CB	$5,000

newsletters, mailings, and newspaper articles.					

Priority Issue #4: Surface Water, Drainage Management and Flooding

Priority Concern: *Manage flooding and its' effects minimizing losses associated with the flooding of agricultural lands. Address runoff volume and water quality deterioration through surface water and drainage management.*

Surface Water, Drainage Management and Flooding Goal: *To implement sound surface water and drainage management strategies.*

ACTION ITEMS	FOCUS AREAS	TIME FRAME	RESPONSIBLE AGENCY	FUNDING SOURCES	ESTIMATED COST
Objective A: Minimize losses associated with the flooding of agricultural lands.					
1. Address the smaller flood events such as 2 year and 5 year events by restoring 150 acres of wetlands through various conservation programs.	Lac qui Parle River Watershed and Redwood River Watershed	2017 – 2021	SWCD, NRCS	BWSR, NRCS	$650,000
2. Target sites, using ACPF tool, LIDAR and terrain analysis, within the Lac qui Parle watershed to achieve strategic flood storage in conjunction with water quality and wildlife benefits.	Lac qui Parle River Watershed	2017-2021	SWCD	BWSR	$5,000
3. Restore 100 acres of flood prone land along rivers, streams and waterways by using the FEMA Floodplain maps to assess agricultural flooding problem areas.	County Wide	2017-2021	SWCD, NRCS	BWSR, NRCS, FSA	$700,000
4. Utilize the ACPF tool to identify priority locations for water storage opportunities; and assess, prioritize and pursue funding for the installation of 100 acre feet of water storage.	Lac qui Parle River Watershed	2017-2021	Area II , RCRCA, LqP, SWCD, NRCS	CWF, BWSR, CB, AREA II, LQP, NRCS	$2,400,000

5. Annually review the County Floodplain Ordinance and amend as needed.	County Wide	2017-2021	PZ	CB	$500
6. Support and cooperate with the Lac qui Parle-Yellow Bank Watershed District on the construction of flood control structures and other structures that benefit water quality.	Lac qui Parle River Watershed	2017-2021	WPC, PZ, SWCD, NRCS, LQP, HD	LQP, HD, CWF, AREA II	$500
7. Designate 50 hours of staff time to assist with the development of a Culvert Inventory.	County Wide	2017-2021	HD, PZ	HD, DA, CB	$2,500
Objective B: Apply watershed based principles in properly managing drainage systems.					
1. Replace 25 open intakes, annually, with alternative intakes, that promote efficient trapping of sediments and nutrients that enter drainage systems.	Lac qui Parle River Watershed and Redwood River Watershed	2017 – 2021	SWCD, DA	BWSR, CWF	$37,500
2. Inspect all small dams/ponds previously installed with federal funds, to determine repair needs.	County Wide	2017-2021	SWCD, AREA II	SWCD, BWSR	$1,600
3. Seek funds to repair three small dams in the county that were previously installed with federal funds.	County Wide	2017 – 2021	SWCD, NRCS, YMR, LqP, AREA II	SWCD, NRCS, LQP, AREA II	$75,000
4. Protect the Lazarus Creek Project, by promoting upland treatment and encouraging landowners to install best management practices, seal abandoned wells and bring non-conforming septic systems and feedlots into compliance in the Lazarus Creek Watershed, thereby protecting the Lazarus Creek Project.	Lazarus Creek Sub-Watershed	2017-2021	LqP, SWCD, PZ, WPC	MDH, MPCA, BWSR, CB, SWCD	$100,000
5. Implement the Wetland Conservation Act.	County Wide	2017-2021	SWCD	BWSR, SWCD	$90,000
Objective C: Manage drainage systems to provide both conveyance and ecological benefits.					
1. Work with contractors and landowners to educate them on ditch and streambank management – buffers, side inlets, stabilizations and cause/effect of erosion, by holding meetings.	County Wide	2017, 2019, 2021	DA, SWCD	DA, CB	$3,000

2. Assist Yellow Medicine County communities in reducing storm water runoff and decreasing movement of sediment and nutrients through bio-retention and rain garden BMPs. Seek funds to assist with the installation of two rain gardens.	County Wide	2017-2021	SWCD	SWCD, CWF, BWSR	$500
3. Provide educational, technical and financial assistance, as available, to landowners for pilot conservation drainage projects.	County Wide	2017-2021	DA, WPC, SWCD	DA, SWCD, CB	$5,000
4. Review 100% of new ditch, lateral and improvement projects, during early coordination, for opportunities for large-scale, multipurpose drainage projects that mitigate the impacts of altered hydrology. Determine project identification, feasibility and preliminary designs, and cost estimation.	Lac qui Parle River Watershed	2017 -2021	DA	DA, AREA II, SWCD, DNR	$200,000
5. Target watersheds of county ditch systems that are in need of repair or cleaning, for soil saving BMPs, buffer strips, side inlets, and water control structures.	County Wide	2017-2021	DA, YMR, LQP, RCRCA, SWCD, WPC	DA, SWCD, CWF	$5,000
6. Drainage inspectors will meet at least quarterly, or as needed, in an effort to achieve greater coordination and consistency across political boundaries.	County Wide	2017 – 2021	DA	DA	$3,000
7. Establish 100 linear feet of saturated buffers annually.	County Wide	2017-2021	SWCD	SWCD, BWSR, CWF, NRCS	$16,600
8. Implement controlled drainage on cropland by installing four control structures annually.	Lac qui Parle River Watershed, Redwood River Watershed	2017-2021	SWCD	SWCD, BWSR, CWF, MDA	$40,000